Regional Economic Impact of Belleayre Mountain Ski Facility

(based on 2009-2010 Fiscal Year)

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Executive Summary

We have estimated the Belleayre Mountain Ski Center's economic impact on the economy within its region and report that impact here.

The total impact of an operation is the sum of direct visitor spending, secondary spending, and the indirect impact created by its operations and vendor activities.

The model reports the following economic results. The total effect of Output/Sales was $12,503,000. The economic activity produced by these sales yields a value added, including personal income, of $7,012,000.

These numbers indicate that the total economic impact of Belleayre's operation was more pronounced in terms of its ability to create personal income, and other value added in the local economy than that generated by the direct sales alone.

We collected data from several sources, both on and off the Belleayre facility. While we sought precision, we often needed to estimate numbers, or sources gave us a wide range rather than a precise response. In these cases, we adopted a conservative approach. For example, when given a range as a response for a category of visitor spending, we used the low end of that range.

Once the data were collected, we used the MGM2 models developed at Michigan State University to determine the economic impact. These models were developed to analyze the impact of National Parks on their local economies, and have been used for similar ski area analyses.

To gain greater confidence in these results and to check that these estimates are indeed conservative, we compared them to two recent studies of other winter sports facilities in the Northeast (see the Comparison to Similar Studies section).

These comparisons do show that we have been conservative in our input estimates, and the results are consistent with this goal.

Introduction

Belleayre Mountain Ski Center (Belleayre) is located off State Route 28 in Highmount, NY, about 2½ hours from New York City. The New York State Forest Preserve declared it "Forever Wild" in 1885. Early on, skiers would hike their way more than 3,000 feet to be the first to make tracks down un-named and woody trails. In the 1940s, skiing enthusiasts pressured politicians to develop Belleayre as a safe and fun mountain for families and extreme skiers. In 1947, bills were introduced allowing New York State to create Belleayre. Construction began in 1949 and Belleayre began its premier winter season with five trails, an electrically powered rope tow, New York's first chairlift, a summit lodge, a temporary base lodge with a cafeteria and dirt floors and parking to accommodate 300 people. Belleayre was an immediate success. As business increased, Belleayre expanded, adding new trails, lifts, lodges and upgrading to new technologies in each decade.

Today's Belleayre is a state-of-the-art facility with 55 trails, parks and glades, and 8 lifts, attracting around 175,000 skiers and snowboarders annually from New York City, Long Island, Northern New Jersey, and from many other parts of the United States and the world. At the same time, Belleayre has grown into an organization with substantial employment during the ski season and undertaking ambitious expansion projects that include the only Catskills Cat-access skiing and snowboarding, the Area 51 terrain park, two progression parks, mogul trails ranging from intermediate to expert bumps and extensive glade skiing[1].

As a center for winter sports in the region, Belleayre is an important economic catalyst for surrounding businesses and communities, especially in the counties of Ulster and Delaware. Spending by visitors and in operating the ski facility has significant impacts on the economy of the local region. Yet, we know of no recent studies of the size of Belleayre's economic impact.

Belleayre Mountain Ski Center is owned by New York State and operated by the Department of Environmental Conservation (DEC). Budget cuts at DEC have had severe impact on Belleayre, which depends on DEC funding for its operations and capital investments under the current business model, triggering discussion in Albany over a possible redesign of its future management and operation models. On the other hand, the local area (Ulster and Delaware Counties) is highly involved in this discussion because Belleayre is perceived to play an important role in boosting their economic development, especially in the aftermath of Hurricane Irene in 2011. This situation calls for an objective assessment of the economic impact of the facility on the regional economy.

We have conducted this research in response to this need. In the rest of the paper, we first explain the theory behind the widely accepted economic models we used to estimate Belleayre's economic impact. We then document how we collected data of visitor spending and facility operations and how we conducted data analyses. Finally, we report our estimate of Belleayre's regional economic impact based on our research results.

Methodology

To assess the economic impact of Belleayre on the neighboring counties (primarily Ulster and Delaware counties), we interviewed the facility's employees and business operators in the area, analyzed Belleayre sales data for 2009-10, and performed formal economic computer modeling. The computer models used were the Money Generation Models (MGM2 and MGMOperate) originally developed for the National Park Service by researchers from Michigan State University[2]. These models have found widespread use in a series of research reports to estimate the regional economic impact of national parks, ski resorts, historic sites, and other tourist destinations[3, 4]. We were also able to compare our study to those conducted for the State of New Hampshire[5], the National Ski Areas Association (NSAA)[6], the Minnewaska State Park[4], and the Gore and Whiteface ski resorts operated by the Olympic Region Development Authority (ORDA)[7].

Impact of Visitor Spending

Economic impact analyses, such as the New Hampshire study and the MGM2 model, divide the **total effects** from spending by visitors to a tourist facility on the local economy into **direct effects** and **secondary (multiplier) effects**[5, 8, 9].

Direct effects are the changes in direct sales, income, jobs, and value added in local business sectors that initially receive the visitor spending.

The first estimate will be sales directly attributable to the local region. Skiers and snowboarders who visit Belleayre will purchase various kinds of goods and services, e.g., paying for admission tickets to the ski facility (lift tickets), paying for lodging to hotels, paying for meals to restaurants or grocery stores, and paying for gasoline to gas stations. The models itemize visitor spending along the above categories and by visitor types. For example, the MGM2 models define key tourism-related sectors (e.g., Motel, hotel cabin or B&B; Restaurants & bars; Groceries, take-out food/drinks; Gas and oil) by visitor segments (e.g., Local day visitors; Non-local day visitors; Motel-out; and Visitors who stay with friends or relatives)[10]. We identified four visitor segments and nine sectors of visitor spending that were applicable to the case of Belleayre. Itemization will likely yield more accurate results than overall, non-itemized average estimates. All segments and categories, including those not deemed to fit this analysis, are described in Appendix A.

The MGM2 models also recognize that visitor spending in goods may only be partially captured in the local economy, unlike visitor spending in services. For instance, when a skier pays $100 for a gift manufactured outside the local region, the direct sales to the local region is not $100; rather, it should be $100 less the amount the local store pays its suppliers for that gift. The percentage of total visitor spending that can be claimed by the local area is the notion of capture rate. In MGM2, roughly 80% of visitor spending is typically captured as direct sales as most visitors purchase more services than goods[10].

Once direct sales have been estimated in this way, their effects on income, jobs, and value added may be estimated by applying "multipliers" – simple ratios (e.g., jobs to sales, income to sales) – to direct sales. We will discuss these multiplier effects next.

Secondary or "multiplier" effects capture the changes in economic activity within the region that result from the re-circulation of the money spent by visitors within the local economy. There are two types of secondary effects: indirect effects and induced effects.

Indirect effects are the changes in sales, income, and jobs in "backward-linked" industries, or firms that supply goods and services to those businesses that sell directly to the visitor. For example, hotels purchase linen supplies, utilities, and other goods and services in the local area in order to provide lodging for the visitor.

Induced effects are the changes in economic activity (sales, income, and jobs) in the region resulting from household spending of income earned through a direct or indirect effect of the visitor spending. For example, hotel and linen supply employees live in the region and spend the income earned on housing, groceries, education, clothing and other goods and services.

Estimating indirect effects and induced effects both involve the application of multipliers. The multipliers we used in the MGM2 model are developed from research of economic activity at national parks and historic sites around the country to calculate direct and secondary impacts. The multipliers used in the New Hampshire and ORDA studies are more specifically targeted to winter sport facilities. The specific set of multipliers used depends on the characteristics of the area where the park is located (urban, rural). We will discuss our choice of multipliers in a later section.

Total effects from visitor spending are estimated as the sum of 1) **direct effects**, which accrue largely to tourism-related businesses in the area, 2) **indirect effects,** which accrue to a broader set of economic sectors that serve these tourism firms, and 3) **induced effects,** which are distributed widely across a variety of economic sectors in the local economy.

Impact of Belleayre's Operation

We used the MGM2Operate model[11] to assess Belleayre's contribution to the local economy through its hiring, operations, and capital investments, as has been done in previous studies[3, 4]. The MGM2Operate model uses payroll expenses, operating expenses, and construction expenses, and generic multipliers to estimate the changes in sales, jobs, income, and value added captured in the local economy as a direct result of operating the facility. As with the MGM2 model, multipliers used in the MGM2Operate are developed from research of economic activity at national parks and historic sites around the country to calculate direct and secondary impacts. The specific set of multipliers used depends on the characteristics of the area where the park is located (i.e. urban, rural).

The MGM2Operate model quantifies the total effect of facility operations. This includes the direct effects associated with payments to employees and vendors that work for the facility. It also takes into account the secondary effects resulting from recirculation of money spent by the facility and its employees. The total effect in dollars is represented as the value added to the local economy as a result of facility operations. Total effect also includes jobs supported by facility operations, including park employees, as well as jobs supported by both direct and secondary effects of spending on facility operations.

Again, we were able to compare these results to the operational impact reported in the ORDA and New Hampshire studies as a validity check[5, 7].

Data Collection and Analysis

We worked with Belleayre Mountain Ski Center and the Ulster County Planning Department to collect the following data needed for conducting the analysis. When appropriate, these data were compared to the NSAA norms and to data reported in the ORDA and New Hampshire studies[5, 6, 7].

Visitation Data

Belleayre provided the visitation data of 2009-10 (the most recent year considered typical with normal snowfalls and skier visits). The dataset recorded Belleayre's ticket sales with many categories of tickets. To determine the types of visitors to Belleayre, we checked sales records for the ZIP codes of ticket buyers and discussed these data with the management of Belleayre. We classified visitors into four types depending on whether they will spend money on local lodging facilities during their visits:

1) Local day visitors who do not spend on lodging;
2) Non-local day visitors who do not spend on lodging;
3) Hotel-out[1] visitors who must spend on lodging in the local area during their visits to Belleayre;
4) VFR visitors who stay the night(s) with their friends or relatives in the local area and do not need to incur lodging expenses.

Spending by local visitors was included following the practice of previous studies. For example, the report of Minnewaska State Park[4] included local visitors. Although spending by local visitors was not included in the ORDA report[7], the authors argued that local visitor spending should not automatically be considered "redirected" spending which will take place in the local economy anyway. We expect that, in the absence of the Belleayre facility, local skiers and snowboarders may travel to ski facilities outside the two counties or even out of the state to Vermont.

Visitor Spending Data

Within the MGM2 model (the other referenced studies used similar breakdowns), visitor spending was itemized into nine categories:

1) Admissions and fees;
2) Hotel, motel, or B&B;
3) Restaurants & bars;
4) Groceries, take-out food / drinks;
5) Gas & oil;
6) Other vehicle expenses;
7) Clothing;
8) Sporting goods;
9) Souvenirs and other miscellaneous expenses.

Visitor spending was estimated on a party night basis, i.e., one party spending one day in the area either in Belleayre or outside Belleayre in the local region of Delaware and

[1] The MGM2 models use the terms *Hotel-out* and *Hotel-in* (or Motel-out and Motel-in) to refer to whether the lodging is outside of the park or inside. As Belleayre does not have on-site lodging, the Hotel-out Segment was not used.

Ulster counties. A party generally refers to all the people traveling in a single vehicle or staying in a single room. In most cases, this is also the spending unit. The estimated party size is 2 persons per party for local day users and 3.6 persons per party for the other three types of visitors.

We then itemized spending for each of the four types of visitors discussed above. We estimated the admissions and fees based on the sales record data provided by Belleayre. Estimates for the other categories were validated through interviewing local business operators when possible. For details, see: Appendix A.

Multipliers for the Local Region

Multipliers (e.g., sales multipliers, capture rates, income to sales ratios, job to sales ratios) for the local region are needed for the estimation of the economic impact of Belleayre. The MGM2 model has included four sets of generic multipliers based on the profiles of the region under research (rural, small metro, larger metro, and state). Alternatively, county specific multipliers are also available from the company IMPLAN. We compared the two alternatives. We communicated with the first author of MGM2 models and the main author of the New Hampshire study – both were kind enough to give us some guidance in selecting regional multipliers to be used in this study. Because MGM2 uses somewhat more conservative IMPLAN Type SAM multipliers[10], we decided that the generic multipliers included in MGM2 models are appropriate for our research purpose and tend to be conservative when compared to studies, such as the New Hampshire study. We used the "rural" set of multipliers in our calculations.

Operation Data

We estimated the total expenses for Belleayre operations and assigned this total to operational categories (including payroll, operating expenditures, profits, capital expenses) using the norms listed in the NSAA report for similar sized ski facilities operating in the Northeast region (which includes New York). This approach will likely yield more conservative estimates because state wages, benefits, and expenditures may be greater than what private sectors would pay.

Data Analysis

To estimate the impact of visitor spending with MGM2, the total spending by Belleayre visitors was first calculated based on types of visitors and their respective spending profile in terms of the nine spending categories. Direct sales are then calculated from the total spending. Then, local multipliers were applied to direct sales to compute the various impacts on the local economy. Economic impacts assessed include the number of jobs and personal income supported and the value added to the local economy as a result of visitor spending. Value added is also commonly used as a measure of the contribution of an industry to a region and represents the sum total of increased value to goods and services that is generated by the local activities being evaluated[10].

To estimate the impact of Belleayre's operation with MGM2Operate, local multipliers were applied to its payroll, operating expenses, and construction expenses to calculate the total economic impact (i.e., number of jobs, personal income, and value added as a result of operating the Belleayre Mountain Ski Facility).

Results and Conclusion

In this section, we will first discuss the results obtained from the MGM models in connection with the procedures for data collection and data analysis required by these models. We will also use the New Hampshire and ORDA models as benchmarks as a validity check. When these results differ, we will try to explain these differences.

Results from MGM2

Table 1 indicates that, in an average year with normal snowfalls, Belleayre attracts about 175,000 skiers and snowboarders, an equivalent of 60,400 party nights in typical recent years. Working with management and local lodging operators, we conservatively estimated the average party size and split visitors into the four segments as:

Segment	Percent of Visitors	Ave. Party Size
Local day visitors	15%	2
Non-local day visitors	65%	3.6
Hotel-out visitors	10%	3.6
VFR visitors	10%	3.6

This yields a total of 54,445 party nights with different spending profiles. Average spending per party night across all segments was $243.03 and total visitor spending was $13,232,000. For segmented spending figures, see Table 1 below.

Table 1. Spending and Visits by Segment

Segment	Visits in Party-night,	Avg Spending ($)	Total Spending $000's	Pct of Spending
L-Day User	13,125	139.00	1,824.4	14%
NL-Day User	31,600	250.20	7,906.3	60%
Motel-Out	4,860	410.20	1,993.6	15%
VFR	4,860	310.20	1,507.6	11%
TOTAL	54,445	243.03	$ 13,232	100%

We compared our estimates of visitor spending with other similar studies of economic impacts to see if they were reasonably reliable. In the Minnewaska report[4] which did not report spending by visitor segments, average spending per visitor day was estimated at $33.24 (p. 7). If converted to party night terms, this would be equivalent to $66.48 per day for a party of two visitors (compared with our estimate of $139 for local day visitors), or $119.66 per day for a party of 3.6 persons (compared with our estimates of $250.20 for non-local day visitors, $310.20 for VFR visitors, and $410.20 for hotel-out visitors). We suggest that the discrepancy may be partially attributed to differences in admissions and fees, as well as in other spending categories such as sport goods and clothes. For example, admissions and fees were estimated to be $68.00 for local day visitor parties and $122.40 for non-local visitor parties at Belleayre. In contrast,

admissions and fees charged at Minnewaska State Park, for example, were merely $8 per vehicle.

In the ORDA report[7], spending per visitor party per day was estimated to be $405.45 for 2006 (p. 20), or $438.55 in 2010 if inflation was adjusted[12]. When differences in local prices were considered (Lake Placid rooms rates seem a bit higher than those in Ulster County), this estimate was rather similar to the spending profile of hotel-out visitors ($410.20) in our research.

In Table 2, we report the economic impact of visitor spending estimated with MGM2 in terms of four indicators: sales, jobs, personal income, and value added. Sales are the direct sales in businesses receiving the visitor spending. Note that direct sales ($9,732,000) is less than visitor spending ($13,232,000), as only the margins for most goods that visitors buy at retail are attributed to the local economy. When "multiplier" effects were included, the total impact on local sales was estimated to be $12,503,000.

Table 2. Economic Impacts of Visitor Spending: Direct & Secondary Effects

Sector/Spending category	Direct Sales $000's	Jobs	Personal Income $000's	Value Added $000's
Motel, hotel cabin or B&B	486	10	212	344
Restaurants & bars	1,249	28	473	534
Admissions & fees	5,950	157	2,161	3,614
Grocery stores	316	7	121	162
Gas stations	427	6	153	199
Other vehicle expenses	272	3	53	121
Other retail	811	20	314	436
Wholesale Trade	221	6	119	133
Total Direct Effects	9,732	238	3,606	5,543
Secondary Effects	2,771	35	769	1,470
Total Effects	$ 12,503	272	$ 4,375	$ 7,012
Multiplier	1.28	1.15	1.21	1.27

Jobs reflect an estimate of the number of jobs supported by these sales. Jobs are not full time equivalents. Direct jobs in each sector are computed by multiplying the direct jobs to sales ratio (expressed in jobs per million sales) times direct sales. The direct sales and total sales reported above supported 238 jobs and 272 jobs respectively in the local economy.

Personal income is the income resulting from the direct sales. Personal income includes wages, salaries, proprietor's income, and employee benefits. Direct income is computed by multiplying the direct income to sales ratio by direct sales. The direct sales and total sales reported above provided personal income in the amount of $3,606,000 and $4,375,000 respectively in the local economy.

Value added reflects the contribution of a business to a region in terms of its total increased value to goods and services through its business activities in the local area. Value added includes personal income plus rents, profits, and indirect business taxes. Direct value added is computed by multiplying direct sales times the direct value added

to sales ratio. The direct sales and total sales reported above created value added in the amount of $5,543,000 and $7,012,000 respectively in the local economy.

In Table 3, we present the estimation results in a more aggregate form. The $13,232,000 in visitor spending created $9,732,000 in direct sales in the local economy, a capture rate of 74%. The effective spending multiplier is the sales multiplier times the capture rate. This number multiplied by visitor spending is the total sales effect.

Table 3 Direct and Total Economic Impacts of Visitor Spending

Economic measure	Direct Effects	Multipliers	Total Effects
Output/Sales ($ 000's)	$9,732	1.28	$12,503
Personal Income ($ 000's)	$3,606	1.21	$4,375
Value Added ($ 000's)	$5,543	1.27	$7,012
Jobs	238	1.15	272
Total Visitor Spending ($ 000's)	$13,232		
Capture rate	74%		
Effective spending multiplier	0.94		

Results from MGM2Operate

In Table 4, we present the detailed computation results of the economic impacts from operating the Belleayre Mountain Ski Center.

Table 4 Economic Impacts of Facility Operation

			Direct Effects				Total Effects			
Facility Operating and Construction	Total	RPC	Local Sales	Direct Jobs	Direct Personal Income	Direct Value Added	Total Sales	Total Jobs	Total Personal Income	Total Value Added
Wages and Salaries	2,806,576	100%		107	2,806,576	2,806,576	1,447,630	131.7	3,218,682	3,625,498
Benefits	245,290	100%			245,290	245,290			245,290	245,290
Total Payroll	3,051,866				3,051,866	3,051,866	1,447,630	131.7	3,463,972	3,870,788
Jobs (annual, full & part time)	56									
Jobs -seasonal (annual equivalent)	51									
Operating Expenses										
Utilities										
Electric	342,265	50%	171,133	0.6	34,834	151,804	190,541	1.0	41,906	163,363
Gas	-	50%	-	-	-	-	-	0.0	-	-
Telephone	-	50%	-	-	-	-	-	0.0	-	-
Water/sewer	-	100%	-	-	-	-	-	0.0	-	-
Postal service	-	0%	-	-	-	-	-	0.0	-	-
Services	1,135,180	10%	113,518	2.0	40,633	53,541	152,066	2.7	54,990	77,499
Auto rental/lease	-	0%	-	-	-	-	-	0.0	-	-
Supplies	479,172	50%	119,793	4.8	61,111	95,450	151,439	5.4	71,681	115,010
Gas and oil	-	70%	-	-	-	-	-	0.0	-	-
Total Operating	1,956,617	0%	404,444	7.4	136,578	300,795	494,046	9.0	168,577	355,871
Operating + Payroll	5,008,483	0%	404,444	114.4	3,188,444	3,352,661	1,941,677	141	3,632,549	4,226,660
Construction										
Roads & Utilities	5,704	80%	4,563	0.0	1,272	1,396	5,711	0.1	1,683	2,052
New Buildings	273,812	75%	205,359	2.0	77,388	82,914	267,135	3.2	100,096	119,273
Repairs	-	100%	-	-	-	-	-	0.0	-	-
Total Construction	279,516	0%	209,922	2	78,660	84,310	272,846	3.2	101,780	121,324
Grand Total			614,366	116.4	3,267,103	3,436,971	2,214,523	144.0	3,734,329	4,347,984

In Table 5, we present the estimation results from MGM2Operate in a more aggregate form. The $5,288,000 in Belleayre's operating expenses created $614,000 in direct sales, $3,267,000 in direct personal income, $3,437,000 in direct value added, and 116.4 directly-related jobs in the local economy. When indirect effects and induced effects were also considered, Belleayre's operating expenses created $2,215,000 in total sales, $3,734,000 in total personal income, $4,348,000 in total value added, and supported a total of 144 jobs in the local economy.

Table 5 Direct and Total Economic Impacts of Facility Operation

Economic measure	Direct Effects	Total Effects
Output/Sales ($ 000's)	$614	$2,215
Personal Income ($ 000's)	$3,267	$3,734
Value Added ($ 000's)	$3,437	$4,348
Jobs	116.4	144
Total Operation Expenses ($ 000's)		$5,288

These numbers indicated that the total economic impacts of Belleayre's operation were much more pronounced in terms of its ability to create personal income, value added, and jobs in the local economy than the direct sales.

Comparison to Similar Studies

We have obtained economic impact of ski facilities performed elsewhere in the Northeast: Whiteface and an aggregate study of all areas within the State of New Hampshire. We can compare key ratios in our results to those of these other studies to further validate the reasonableness of our results. We can also use the methods and factors, such as multipliers, contained in those studies but applied to our data to obtain another set of impact numbers. Besides comparing the results, we can also check their assumptions to see whether our assumptions ar eindeed conservative

Input to comparison models

The primary inputs to the comparison models are total skier visits, total revenue and total expenses. As in the MGM models, these are categorized and adjusted by multipliers to estimate direct, secondary, and indirect effects.

Total skier visits and total revenue

Inputs - Belleayre

Total skier visits	175000
Total revenue	$5,288,000
Total expenses	$5,288,000

Inputs-New Hampshire-aggregate

The New Hampshire Study[5] reports the following:

Total skier visits	2,350,000
Total revenue (in area)	$108,000,000
Total expenses	not reported

Inputs-Whiteface

The ORDA Study[5] of the Whiteface facility reports the following:

Total skier visits(07-08)	214,850
Total revenue (in area, 07-08)	$10,470,000
Total expenses	not reported separately

Comparing these three sets of numbers, we obtain:

	Belleayre	New Hampshire	Whiteface
Total skier visits	175,000	2,350,000	214,850
Total in-area revenue	$5,288,000	$108,000,000	$10,470,000
Revenue per skier visit	$30.22	$45.96	$48.73

The above results are not surprising. For example, while a non-discount adult holiday period tick at Belleayre costs $57, this ticket costs $84 at Whiteface and in the mid $70 range at the major New Hampshire ski areas (source: the ski area web sites).

Direct spending per visitor

We will next compare the estimates of direct spending per visitor, both at the ski area and at businesses near by.

The New Hampshire study reports total direct spending by ski area visitors of:

Total direct spending by visitors (in millions of dollars) 2009-2010

Lodging	$56.7
Restaurants	$58.1
Other retail	$53.9
Services	$14.9

Dividing these figures by the reported 2,350,000 visits expenses per visitor of:

Lodging	$24.13
Restaurants	$24.72
Other retail	$22.94
Services	$6.34

The New Hampshire study also reports that 54% of visits are overnight and 46% are day trips.

The ORDA study does not report expenses per visitor for Whiteface alone. However, they report an average expenditure per visitor of $81 per day over all the facilities within ORDA. Lodging expenses account for 30% of the total, meals are 15%, retail and other services are 11% each. These percentages result in a per person expenditure of:

Lodging	$24.60
Restaurants	$12.56
Other retail	$8.60
Services	$8.60

The ORDA study reports that 59% of Whiteface skiers stay overnight.

We can now compare our Belleayre per person spending estimates for lodging, restaurants, and retail to those reported in the ORDA and New Hampshire surveys. To do so, we need to divide the lodging numbers in the two other studies by their overnight percentages, and compute a weighted average over all segments for the Belleayre estimates fin the restaurant and retail categories.

	Belleayre	New Hampshire	Whiteface
Lodging per overnight visitor night	$27.77	$100	$40.67
Restaurant per visitor-day	$7.14	$24.72	$12.56
Retail per visitor-day	$4.89	$22.94	$8.60

The spending estimates for Belleayre are lower than those in the other two studies. This may reflect both a lower actual spending and our desire to be conservative in our estimates.

Total economic impact comparison

Direct comparison of the total economic impact across the three studies is made more difficult in that the studies do not all use the same definitions of effects other than the direct sales effect.

The ORDA study shows (all venues, not just Whiteface):

Direct Impact:	$138,894,793
Indirect Impact:	27,251,119
Induced Impact:	38,204,420
Total Labor Income Impact:	16,576,516
Total Impact:	$220,926,848

ORDA shows a total of visits to all venues of 729,271. This yields a total impact per visit of $303.

The New Hampshire reports Total Direct Purchases and Secondary Sales, which are estimated by applying a multiplier of 1.87 to direct sales. The New Hampshire study reports:

Total Direct Purchases: $282,200,000

Secondary Sales: $527,010,726 (obtained by applying the multiplier to total skier spending)

Total Sales: $809,201,726

The New Hampshire study shows a total of visits to all areas of 2,350,000. This yields a total impact per visit of $344.

In the summary below, we state our reservations to summing up all the categories of estimated impacts. However, these two comparison studies do sum their estimates. To be able to compare our results to theirs, we can sum our estimates to $34,187,000. When we divide this sum by total visits we obtain a figure of $195.

We expected our figure to be lower. Belleayre is a less expensive ski area, we have been conservative in our spending estimates, and we apply more conservative multipliers to direct sales to obtain the other effects estimates.

Summary

In Table 7, we present the estimation results from MGM2 (impact of visitor spending) and MGM2Operate (impact of facility operation) side by side. We did not sum up the two groups of estimated results for fear that doing so should yield inflated estimation of Belleayre's economic impact since "double counting" could not be properly addressed.

Table 7 Estimated Impact of Belleayre Mountain Ski Facility On the Regional Economy

Economic measure	Direct Effects		Total Effects	
	Visitor Spending	Facility Operation	Visitor Spending	Facility Operation
Output/Sales ($ 000's)	$9,732	$614	$12,503	$2,215
Personal Income ($ 000's)	$3,606	$3,267	$4,375	$3,734
Value Added ($ 000's)	$5,543	$3,437	$7,012	$4,348
Jobs	238	116	272	144

* These effects are estimated based on Total Visitor Spending of $13,232,000 and Total Operation Expenses of $5,288,000.

As described above, many of the parameters used as input to the MGM2 models needed to be estimated. While we have reasonable confidence in many of these estimates,

others, such as visitor spending outside of the Belleayre facility and the proportion of visitors staying overnight, could be more accurate with in future research effort. For instance, a survey of visitors could be conducted to raise confidence in these parameters. However, a sample that is both large enough to provide statistically tight confidence intervals and that follows statistically valid experimental design principles was beyond the time and cost budget of the current study.

Appendix A – Parameter Estimation

This appendix will document the methods used to estimate the input parameters in the models of Belleayre Economic Impact.

Total visitors

Total visitors: 175,000

The current ski season is not representative of a typical ski season. It has been a warm and snowless winter. Total visitors in the 2009-2010 season were 175,000. Management agrees that the 2009-2010 is representative of a typical recent season and that the visitor total is representative of a typical recent year.

Visitor segment split

Segment	Percent of Visitors	Ave. Party Size
Local day visitors	15%	2
Non-local day visitors	65%	3.6
Motel-out visitors	10%	3.6
VFR visitors	10%	3.6

The MGM models define 8 segments. As the model was originally developed for National Parks, several of these segments do not apply to Belleayre (Camp-in, Backcountry Campers, Camp-out). Also, Belleayre does not have lodging on site, so the Motel-in segment does not apply. The terms *in* and *out* reflected inside or outside the park.

The percentage in each segment was first estimated after discussions with Belleayre management. However, while their sum for the last two categories was 20%, we increased the motel segment and decreased the VFR segment to more closely match estimates we developed after interviews with larger local motel operators.

These local lodging operators also confirmed that 3.6 people is a reasonable typical party size for motel-out. We used this same party size estimate for all but the Local-day category, which we estimated as 2 people on average.

Visitor Spending by Category and Segment

The MGM models define 12 spending categories. Again, as the model was originally developed for National Parks, two of these categories do not apply to Belleayre (Camping fees, Gambling). Also, the Local Transportation category does not apply.

The categories that remain are:

- Motel, hotel cabin or B&B
- Restaurants & bars
- Groceries, take-out food/drinks
- Gas & oil
- Other vehicle expenses
- Admissions & fees
- Clothing
- Sporting goods

- Souvenirs and other expenses

Motel, hotel cabin or B&B. This category only applies to the Motel-out segment. We estimated the average room rate as $100 from a large sample of the published room rates of local lodging. The party size estimate was also confirmed as being reasonable.

Restaurants & bars. Average spending in this category will vary significantly by segment.

Local day visitors: $10 per party of 2 (50% of local day visitors spending $10 each on lunch or refreshments after skiing)
Non-local day visitors: $20 per party of 3.6(doubling the above figure to reflect party size is almost double)
Motel-out visitors: $60 per party of 3.6 (50% of parties spending an average of $120 over three meals)
VFR visitors: $40 per party of 3.6 (60% of above figure to reflect the percent of meals prepared at visited home)

Groceries, take-out food/drinks. Average spending in this category will vary significantly by segment.

Local day visitors: $10 per party of 2 (50% of local day visitors spending $10 each buying items for lunch or refreshments after skiing)
Non-local day visitors: $20 per party of 3.6(doubling the above figure to reflect party size is almost double)
Motel-out visitors: $40 per party of 3.6 (50% of parties spending an average of $80 buying food for three meals)
VFR visitors: $60 per party of 3.6 (150% of above figure to reflect the greater percent of meals prepared at visited home)

Gas & oil . For local, 50% of visitors filling up with $40 worth of fuel. For the other three segments an average of one $40 fill-up per party.

Other vehicle expenses. $5 for all categories.

Admissions & fees: $34 per person multiplied by the party size in each segment. This is the average lift ticket price per person across all ticket categories.

Clothing: In keeping with our desire to keep estimates conservative, we will limit our clothing purchases to the 14% of visitors thought to rent equipment off the facility. The two largest rental vendors both estimate that these customers also purchase between $25 and $50 worth of clothing and gear while they are renting. We will use the low estimate of $25 per person. This results in estimates per party size of $25× 2×0.14= $7.00 for local-day, and $25× 3.6×0.14= $12.60 in the other three segments.

Sporting goods: The above category does not separate clothing and gear purchases made in the ski shops. This category will reflect spending on equipment rentals. Belleayre reports roughly 25,000 rentals per season. Both Belleayre and the off-mountain shops estimate that roughly half of all rentals occur off-mountain. This results in a total of 50,000 rentals, or 28% of total skier visits. Of the three major rental shops, the lowest price is $25 per day, the figure we will use in this estimate. When multiplied by the percent of guests renting (either off or on mountain) and the party sizes, the

estimates are $25× 2×0.28= $14.00 for local-day, and $25× 3.6×0.28= $25.20 in the other three segments.

Souvenirs and other expenses: We have little information on this as a separate category. We estimated $5 per party for the local day, and visiting friends segments and $10 per party for the non-local day and motel-out segments.

The table below displays this input

Category/ Segment	Local Day	Non-local Day	Motel-out	Visiting F&R
Motel, hotel cabin or B&B	0	0	100	0
Restaurants & bars	10	20	60	40
Groceries, take-out food/drinks	10	20	40	60
Gas & oil	20	40	40	40
Other vehicle expenses	5	5	5	5
Admissions & fees	68	122.40	122.40	122.40
Clothing	7	12.60	12.60	12.60
Sporting goods	14	25.20	25.20	25.20
Souvenirs and other expenses	5	5	5	5

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